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BUREAU OF PLANT INDUSTRY,
OFFICE OF DRY LAND AGRICULTURE.

FEB 23 1917

REPORT OF FIELD STATIONS UP TO APRIL 4, 1914.

ARDMORE:

Mr. Kelso reports as follows:-

"Soil conditions seem to be very favorable for producing a crop this year. There certainly is much more moisture in the ground than at any time since I have been in the country. We expect to be at work in the field by the first of next week (Mar. 23-28). The frost is gone out of the ground, and a little storm last night (March 18) is all that prevented us getting at our spring plowing today."

GARDEN CITY:

Mr. Lill reports as follows under date of March 28, 1914:-

"The crop conditions are about the same as they were earlier in the month. No rain has fallen but the winter wheat and rye are making good growth. All the plats of winter wheat were thinned according to advice from Mr. Cole, as it was thought that the wheat on the plats would have a better chance to mature seed if the plants were thinned on the ground. The effect of the winter in this section where the soil froze at night and thawed out in the day time was to create a deep layer of dust on all the unprotected parts of the fields and this dust is blowing with any wind above ordinary. Several days have been rather bad. Fields have been swept nearly clean in some instances. Although nearly all the tilled land in the vicinity has been blowing, no blowing of any consequence has occurred on the station. Mr. Cole paid a visit to the station in the earlier part of the week and conferred with Professor Call in regard to the work carried on. While he was here the wind for one day which included several still hours averaged between thirty and forty miles an hour on the eight foot anemometer. Instruments to record the humidity on a chart, to keep a record of the wind and the intensity of the suns rays have been secured for the season through Doctor Miller of the State College. All the spring grains and green manures have been planted. These crops have not come up yet but the seed has germinated well."

AMARILLO:

Report for two weeks ending March 28, 1914.

"The past winter has been very mild and dry, the minimum temperature recorded was -1, total precipitation since Jan. 1st, .02. The month of March has been marked by its difference in climate as compared with the corresponding periods in 1912 and 1913. Only .01 inch of precipitation has been recorded and this was in the form of snow. Since the 11th (date of my arrival) only two days of high wind were recorded. The most severe wind storm came from the North about 5:00 P. M., the 18th, and proved to be about the worst dust storm experienced here in the past three years. No damage was done to any of the plats. On the whole the weather has been unusually mild and pleasant, and the fall seeded plats, which have excellent stands, are growing off rapidly.

AMARILLO, Continued:

The soil is wet to a depth of two to five feet, but the surface three inches is very dry, making it necessary to seed deep. The spring wheat seeded on the 14th is just emerging thru the ground, and the other grains seeded on the 16th and 17th are germinating. The plats to be devoted to intertilled crops and fallow were harrowed or disked on the 18th. Five of these plats are badly infested with volunteer winter wheat which may have to be hoed out by hand in order to entirely eradicate it.

Maximum temperature 81 on the 15th, minimum 12 on the 19th.

HUNTLEY: Report for week ending March 27, 1914.

During the week previous to the past five days, conditions were favorable for plowing. There is one more days plowing, which will be done as soon as the fence is moved, to complete the breaking of the sod for the three series of new work to be added this year to the west of the old block. The soil seems to be a little/~~un~~uniform but Mr. Hansen says no more so than the other was at the time it was broken. The new block has no soil as heavy as that on the north of the first series on the east. As we have outlined the rotations they will be on quite uniform soil. The cultural tests, and the different methods of preparing fallow will be on slightly more sandy soil than the rotations. The soil on this freshly broken sod land is wet to a depth of about one and a half feet at present. Winter rye and wheat are rather small but have survived the winter in good condition.

COLBY: Mr. Kuska reports as follows under dates of March 7th and 16th:

Preliminary arrangements for starting the Dry Land Agriculture Investigations on the sub-station at Colby, Kansas are in progress. Professor Call and Thompson of the Kansas State College, Mr. Cole, Mr. Clark, the superintendent, and myself visited the station farm Tuesday, March 3rd. A level tract of land, comprising approximately twenty five acres, was selected for the Dry Land experiments. Mr. Cole and the Kansas officials have planned the rotations. The land is in winter wheat at present. No work has been done as yet owing to the fact that no equipment has been secured.

During the fore part of the week warm weather prevailed, though a cold wave has come up nearly every afternoon and evening accompanied by wind and some snow. Today the thermometer has gone down considerably, and the wind is low. The ground freezes some every night.

That blowing will be a factor for the farmers to contend with this spring has become apparent. Our farm has not been affected so far, but the extremely high wind yesterday caused the soil on all sides of us to move. Northeast of town where a large area has blown during the last three years, a moderate wind raises clouds of dust. The high wind yesterday filled the air with clouds of dust for miles. About a quarter section not far from the station to the southwest has also been blowing considerably. Aside from that, the section of the country west and south of here has not blown any.

The area northeast of town threatens to be a serious menace to the community. In autoing through there Thursday we found traveling quite difficult owing to drifting soil. It seems to drift as easily as snow. One passing through it can see only a few feet before him. Around several farmhouses we saw drifts of soil as high as the window sills. Much of this area is or has

COLBY, CONTINUED.

been in wheat. Barring the drifting of the soil the prospects are good for a wheat crop.

The snow is all gone. The surface soil is dry and in an excellent condition for blowing. A few inches below the soil is quite moist. The settlers here consider the ground as having more moisture this spring than usual.

Saturday the 14th the thermometer went up to 74°. The Kansas College will have a surveyor out here on March 23rd. He will lay out the farm as well as the ten-plat blocks on the Dry Land experimental field.

DALHART:

Plans are under way for the erection of a bunkhouse at the station, and the changing of another building for use as a seed and laboratory building. Mr. Griggs reports under date of April 1st: "We have been having good weather for outdoor work during the past two weeks and have the cement and most of the gravel hauled. We were fortunate in finding a good bed of gravel within a mile of the station.

The spring grains were seeded March 14th and 16th and are at present writing are up and in good condition, a good stand having been secured with all varieties.

I received my authorization to attend the Farmers' Congress, at Guymon, Oklahoma yesterday, and have planned on giving them a general discussion of the work as a whole and detailed results of the work with milo and kafir."

WOODWARD:

The station at Woodward, Okla. has been formally opened this spring and work is progressing in a highly satisfactory manner. The farm consists of a 1/4 section of land leased to the Department. Contracts have been let for the erection of a superintendent's residence, Office and Laboratory building, and a barn and Implement Shed. Work has commenced on these structures and is being pushed. The Superintendent's house is ready for wiring, plumbing is in and practically all the sheathing done. The foundation of the barn is in and the lumber cut for the frame. The laboratory is waiting on city water which will be available by the latter part of the week as all ditching will be completed today (3/31) as well as the pipe distributed. A light rain occurred on the 31st and there is prospect of more seeding being done soon. Three hundred trees and a few shrubs have been ordered and will be set out improving the appearance of the grounds very much.

NOTE: Mr. Cox has requested that the field men be advised to be sure and send in all used transportation requests. There are quite a large number outstanding at present and the men will please send them in at once.

A large number of the weekly reports have not been received covering the present week. The field men in charge of station work will please send in their reports covering work since the first of April and weekly thereafter.

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BUREAU OF PLANT INDUSTRY,
OFFICE OF DRY LAND AGRICULTURE.

Washington, D. C., April 25, 1914.

REPORT FOR WEEK ENDING APRIL 18, 1914:

AKRON:

The first four days of the week were very favorable for field work. About 8 acres were broken, dirt was hauled for Dr. Shantz's cans, part of the grain nursery was planted, and a part of the trees in the forestry planting were trimmed. The forestry plantings of 1909 and 1910 are being trimmed severely and a part of the poorer trees removed. As the trees were planted 8' x 8' and had never had more than a light pruning it had become almost impossible to cultivate part of them with a horse. Friday and Saturday have been wet and cold and no work was done in the fields. Oats and barley are just coming up. Maximum temperature for the week 77, minimum 24, Precipitation 0.73".

AMARILLO:

Weather for the week mild and clear, with considerable wind prevailing the latter part. Winter grains are making a rapid growth and will need rain soon. The Hallock weeder was used on the winter wheat on the 18th. All the plats devoted to fallow and the intertilled crops with the exception of the A and F plats were harrowed on the 17th. The showers of last week aided germination in the spring grains which have been lying dormant since seeding time. However it is yet impossible to determine whether or not uniformity of stands will be secured on all the plats. The new fence has been completed around the weather instruments and adds much to the appearance of the farm. Maximum temperature 87, minimum 30.

ARCHER:

This week was the first during which any field work to speak of was possible. The fore part of the week was very fine, but the last two days have been just the reverse. About 6 inches of snow fell on the 17th and 18th which soon melted away, but it was accompanied by a severe northwest wind which made outside work impossible. All D. L. A. plats were spring plowed on the 13th, 14th, and 15th and discing was in progress when it was stopped by rain. The land was in fine condition for plowing, and the recent precipitation has made a seed bed which contains sufficient moisture to give crops a good start. The precipitation for the week ending the 11th was .68 inch, and for the week ending the 18th .44 inches. The mean temperature up to the present date this month is slightly above normal being 44°. The maximum and minimum temperatures for the week ending the 18th are 70° and 20° respectively. If weather is suitable, seeding will begin on the 20th. Work on the new house is progressing nicely. The frame is up and all of the weather boarding done.

ARDMORE:

The first part of the week was very favorable for conducting farming operations. All plats of wheat, oats and barley were seeded. A rain of 1.09 inches fell on April 16th and 17th. This is the only precipitation of any consequence that we have had since last September. The sub-soil is very dry.

BELLEFOURCHE:

As a whole the week was cold and little growth took place. None of the small grains have come up as yet. On one or two days high winds arose and there was considerable soil blowing on some parts of the farm, though little took place on the rotations. No team work was done on any of the plats during the week. The Maximum temperature was 78, minimum 26, precipitation .17".

DALHART:

The weather during the past week has been cool and cloudy with no rain except a light shower Saturday afternoon. The spring grains have made but very little growth but the winter grains especially the winter rye are looking well for this time of the season. The alfalfa, planted in rows in 1912, is now about six inches high. A shipment of 900 trees was received Monday from the Garden City Nurseries of the Forest Service and were set out Tuesday and Wednesday. These trees were in good condition when received and were set out on land fallowed last summer. The excavating for the seed house has been completed and the foundation for the bunk house has been poured. Work was started on making the blocks for the bunk house Monday but had to be delayed on account of the freezing weather during the first part of the week, Maximum temperature for the week 86, Minimum 29.

DICKINSON:

During the week the Dry Land small grain seeding except flax was finished. On the 17th we got a rain of 0.4 inch. This put the land in fine shape for seed germination. An examination of the wheat and oats put in on the 11th and 15th respectively showed both to be germinating nicely. On the whole the land has been in as good condition for working as one could wish. The weather has been pleasant and wind velocity low. Maximum temperature for the week 75, minimum 33.

EDGELEY:

Seeding has been general throughout this section during the past week. Fair weather has prevailed up to yesterday afternoon,(Apr. 17th), when a high wind blew from the northwest and the temperature cooled off quite rapidly, the soil also blowing quite badly. During the night it began to rain and at 8:00 A. M. April 18th 1.66 inches of water had fallen, and it is still raining. All of the spring plowed plats for small grains were plowed on the 17th, the frost not being out of the ground sufficiently in all places to plow them earlier. The fallow plats and plats to be stubbled in were disked on the 16th and 17th. The soil contains a fair supply of moisture and worked up in good shape except in a few places which were still somewhat wet. All small grains will be seeded as soon as the land is sufficiently dried from the present rain. Maximum temperature 74, minimum 25, precipitation 1.66 inches.

GARDEN CITY:

The weather the past week has been dry with only one chance to rain. No rain fell. The highest temperature was 90 and the lowest 32. The wind for the most of the week has been very low but is making up for lost time at present. The automatic recorder is marking up between twenty-five and thirty-five miles an hour now and has been busy for the last eight hours at the same rate. The soil in some parts of the station is beginning to blow a little but no serious damage has occurred yet. It is impossible to see objects like a house or barn over a half mile on account of the dust that is in the air carried from the distance. On some of the fields near the station it is impossible to see but a very little distance. The spring grains are in good condition. A better stand was secured on the fall plowed or disked plats. If a rain comes within any reasonable time it is possible that the stand on the spring plowing will be equal to that on the other plats as some of the grain is still lying in dry soil. The winter grains, wheat and rye, have made such a rapid growth this spring that they are suffering very noticeably for water now. The plants have every appearance of plants suffering from lack of moisture late in the season. Mr. F. B. Milliken, entomologist and field man for the bureau of entomology visited the station this week and claimed that the apparent injury to the wheat and rye was caused in part by a fungus growing parasitically on the roots of the plants. Examination did show something resembling a fungus growth on the roots but the roots were found to be in very dry soil. The rye has started to joint and has the appearance of being at a much more advanced stage than is warranted by the season.

HAYS:

The weather during the past week has been variable, ranging in temperature from 20.5 to 84 degrees, considerable wind at times followed by cloudiness and threatening storms which clear away without producing any rain. Total precipitation for the week, .11", -.04" on the 14th and .07" on the 17th. Today, Apr. 18th, we are experiencing the most severe dust storm we have had for a few weeks. The sky is full of dust. Had our small grain plats been seeded previous to this time, there is not doubt but what the storm which we are now experiencing would be producing very damaging results. We therefore feel that we have already been justified in delaying the spring seeding to what seems, and would be under ordinary circumstances a very late date for seeding. We are still hoping for a rain to make conditions more favorable. During the larger part of the week soil sampling work has been in progress. Some winter wheat plats were trimmed, and more stakes set. Plat B Rotation 508 was listed, and M. C. Winter wheat Plat M was plowed.

HETTINGER:

During the first of the week all the corn ground, fall plowing and last years fallow was disced or double disked according to the amount of work which had previously been put on them. The last few warm days have started the thistles to growing in fine shape and the recent discings have done much to prepare a clean seed bed. Sweet clover has not yet made any growth, but the M. Red clover has lived through the winter better than any year previous. Alfalfa

HETTINGER, CONTINUED:

is making excellent growth but last year's seeding of brome grass is rather thin. There was a light rain Thursday and Friday but too light to be of any value, only amounting to.18 in. Maximum temperature 75, minimum 17.

HUNTLEY:

Soil conditions in this locality are above normal. There has been no dashing showers to pack the surface soil which is very loose this season. Spring plowing, which is generally very cloddy is giving a fair seed bed. Considerable contrast is noted in the condition of the winter wheat plats. Soil on the green manure plats is very mellow and loose, but the plants show less vigor than other plats. The condition of the disked corn plats is much better relatively then last season. Seeding of small grains was completed on the 16th. This was followed on the 17th by a slow rain of .3 inch, so germination should be good. Professor Atkinson, Agronomist of the Montana Experiment Station, visited the farm on the 13th. Maximum temperature 75, minimum 32, precipitation .38".

MANDAN:

The season at Mandan has been quite favorable for spring work. On March 25th a snow fell to a depth of six inches, and for about two days previous and subsequent snows varying from one to two inches, aggregated for the week about ten or twelve inches of snow on the level. Previous to these snows the frost had gone out of the ground to the depth of nearly a foot and as a result when the snow melted there was very little runoff. The fall and winter had been exceptionally dry. The weather during April has consisted of cold blustering days interspersed with several warm ones. The main rotation plat field has been disked twice and harrowed three times. All of the wheat and some of the oat plats have been planted. The south rotation plat field has been prepared for planting: also the twenty-six acre horticultural field directly south of the buildings. Several varieties of fruit and forest tree seed have been planted, including fifty pounds of the seed of Amygdalus davidiana, a hardy peach from northern China which was received from the Office of Foreign Seed and Plant Introduction. The apple grafts that were made during the winter months have also been planted. Two large hot beds have been prepared and planted to cabbage and other vegetables in order to produce plants for transplanting into the field. The greenhouse has been in operation since the first of March. A large variety of vegetables, and flowering and other plants, is being propogated. Over one-hundred (100) fruit trees and bushes have been planted in tubs. These trees are to be grown in the tubs for a year and taken into the greenhouse next February and used in certain fruit breeding work. Mr. John S. Cole has spent the week at the station looking after laying out and planting of the rotation plats. Mr. J. F. Breazeale, of the Bureau of Chemistry, is conducting some experiments in the greenhouse on the fertilization of seedling wheat.

SCOTTSBLUFF:

Field E came through the winter in good condition. Little damage resulted from blowing soil. For the first time since the rotations were started, winter wheat M.C. A, survived the winter, a two thirds stand being secured. At this date, (Apr. 18), winter wheat and rye are tillering rapidly. Seeding brome grass last year with a nurse crop has resulted in a good stand. Spring wheat and peas are just coming up. The soil is in good condition and carries a little more moisture than last spring. On the 16th and 17th, 1.15 inch rain fell. None was lost in run-off as it fell in a steady drizzle, wetting the soil down two or three feet. Prospects are good.

TUCUMCARI:

Most of the work for the week has been devoted to cultivation of the soil to prevent "soil blowing". The first three or four inches of the surface is quite dry and some moisture will be needed before much planting can be done. A very heavy frost occurred on the 11th of the month, when the temperature dropped to 30. The plat of corn planted on the 31st of March is coming up to a good stand. On the 18th, a plat of milo and corn was planted with the lister in the variety plats.

Precipitation .01 of an inch. Maximum temperature 86, minimum 30. Total number of miles of wind 1082. Hourly average for week 6.4 mi. Greatest 24 hour average 11.8 miles on the 16th. Most of the week was very windy, especially the latter part. The high winds did considerable damage to several of the plats of small grain by causing soil blowing.

WILLISTON:

The frost has gone out of the soil and climatic conditions are a trifle better than at this time last year. The spring plowing for small grains was done the latter part of the week. Seeding of varieties was done and the rotation plats will be planted in two or three days. We are having out first trouble with brome grass persisting in the fall breaking. We are using a Tower cultivator on those plats. Date of seeding plats for the leading spring crops have been started here, which ought to furnish us data on whether our results from seeding our spring plowed plats as early as out fall plowed plats would vary any from those which we would obtain if we approximated commercial conditions, e.i., seeding the spring plowed plats a week or two later. Maximum temperature 79, minimum 25, Precipitation .09".

WOODWARD:

Generally the past week has been very pleasant, tho two days were too warm for the season. Maximum temperature for week, 94. Small grains planted on the tenth are up in fine shape, hardly better conditions could have prevailed for starting them off. Corn planted the 16th received a light shower of .17" on the 17th. The great trouble with rowed stuff here is with various pests such as pocket gophers, field mice and moles destroying the seed. The house is now ready to plaster inside and out. The machine shed is ready for shingles and siding, and the barn frame is ready to raise. The foundation for the laboratory is in. Work done on the farm this week consisted chiefly in breaking sod and getting the land in somewhat better shape for seeding. Farmers remark that we are evidently doing a better job of preparing our land than is usually done with sod, so perhaps winter breaking may not mean that our crop prospects are spoiled.